

CLAIMS

What we claim is:

- 1 1. A communications system, comprising:
2 a plurality of mobile devices that each include at least one of a network subsystem
3 and a positioning subsystem, the network subsystem automatically assembling and
4 configuring a wireless network among the mobile devices for information transfer, the
5 positioning subsystem automatically generating position information of each mobile
6 device using at least one of information from a satellite-based positioning receiver of the
7 mobile device; and
8 at least one base station coupled for information transfer with a wireless
9 communication subsystem of one or more of the plurality of mobile devices, the base
10 station tracking and mapping individual positions of each mobile device using the
11 position information and identifying each mobile device on a map display using an
12 identification number assigned to each mobile device.
- 1 2. The system of claim 1, wherein the satellite-based positioning receiver includes a
2 Global Positioning System (GPS) receiver.
- 1 3. The system of claim 1, wherein the positioning subsystem further includes at least
2 one of a Radio Frequency Identification/Direction Finding (RFID/DF) system, an
3 infrared (IR) system, an acoustic system, a triangulation system, a signaling system, an
4 accelerometer-based system, a gyroscope-based system, and a dead reckoning system, for
5 location and tracking.
- 1 4. The system of claim 1, wherein the base station further comprises a graphical user
2 interface (GUI) that displays the individual positions of each mobile device on a three-
3 dimensional map.

1 5. The system of claim 1, wherein the coupling among the base station and the
2 mobile devices includes at least one of a wired coupling, a wireless coupling, and a
3 hybrid wired/wireless coupling.

1 6. The system of claim 1, further comprising at least one sensor, wherein the sensor
2 provides at least one of light, temperature, biometric information, barometric data, and
3 signal strength data.

1 7. The system of claim 1, wherein the mobile devices further include an
2 identification generator that generates the identification number.

1 8. The system of claim 1, wherein the mobile devices further include an encoder
2 subsystem that encodes data transferred among the mobile devices and the base station.

1 9. The system of claim 1, wherein the wireless communication system includes at
2 least one of an IEEE 802.11 wireless transceiver, a Bluetooth transceiver, and an radio
3 frequency (RF) transceiver.

1 10. The system of claim 1, wherein the mobile devices further include at least one
2 two-way pager system for communications, wherein the pager system provides at least
3 one pre-programmed response to a user for use in responding to received messages,
4 wherein the pre-programmed responses are reprogrammable.

1 11. The system of claim 1, wherein communications among the mobile devices and
2 the base station are made via at least one of High Frequency (HF) communications, Very
3 High Frequency (VHF) communications, Super High Frequency (SHF) communications,
4 Ultra High Frequency (UHF)/microwave communications, cellular communications,
5 satellite communications, public safety band communications, and Public Switched
6 Telephone Network (PSTN) communications.

1 12. A portable device, comprising:

2 a network system that automatically assembles a wireless network among other
3 portable devices and control devices in a geographical area;

4 an identification system that automatically assigns a unique identification number
5 to the portable communication device;

6 a communication system that receives and transmits data over the wireless
7 network via at least one of the other portable devices and control devices using at least
8 one of High Frequency (HF) communications, Very High Frequency (VHF)
9 communications, Super High Frequency (SHF) communications, Ultra High Frequency
10 (UHF)/microwave communications, cellular communications, and satellite
11 communications; and

12 a positioning system that includes Global Positioning System (GPS) components
13 and at least one location sensor, the positioning system automatically determining a
14 position of the device periodically and automatically transferring the position to at least
15 one of the control devices via the wireless network.

1 13. The device of claim 12, wherein the positioning system further includes at least
2 one of a Radio Frequency Identification/Direction Finding (RFID/DF) system, an
3 infrared (IR) system, an acoustic system, a triangulation system, a signaling system, an
4 accelerometer-based system, a gyroscope-based system, and a dead reckoning system.

1 14. The device of claim 12, further comprising at least one sensor, wherein the sensor
2 provides at least one of light, temperature, biometric information, barometric data, and
3 signal strength data.

1 15. The device of claim 12, further comprising at least one of an identification
2 generator that generates the identification number and an encoder subsystem that encodes
3 data transferred among the portable devices and the control devices.

1 16. A method for automatically communicating among mobile devices, comprising:
2 automatically assembling a wireless network among a plurality of mobile devices
3 and control systems in an area, wherein assembling includes adding mobile devices and

4 control systems to the wireless network as they arrive in the area and removing mobile
5 devices and control systems from the wireless network as they depart the area;
6 automatically transferring data communications among the mobile devices and
7 the control systems, wherein the data communications include position and identification
8 information of each mobile device of the wireless network;
9 tracking a position and status of a mobile device using the position and
10 identification information; and
11 generating a display that includes a map displaying individual positions, position
12 tracks, and identifications of each mobile device using the position and identification
13 information.

1 17. The method of claim 16, further comprising receiving sensor data from at least
2 one sensor of at least one mobile device.

1 18. The method of claim 17, further comprising:
2 comparing the sensor data with previously received data of the mobile devices;
3 generating predictions using results of the comparison, wherein the predictions
4 are predictions of progress of an engagement; and
5 displaying the generated predictions on the display.

1 19. The method of claim 18, further comprising generating recommended courses of
2 action using at least one of the results of the comparison and the generated predictions.

1 20. The method of claim 16, wherein tracking a position and status further comprises:
2 generating a historical position trace for each mobile device; and
3 displaying the position trace on the map.